

ISS Research Accommodations Status



15 August 2003 (Data through 31 July 2003)

[POC: Lesa Roe/OZ]

Research

METRIC TYPE

STATUS

ORGANIZATION

ACCOUNTABLE POC

UPDATED

▶ Key Program Performance Indicators

Y

▶ OZ

▶ Roe

▶ 8/15/03

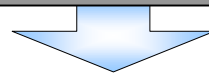
DESCRIPTOR

- ▶ The Research Indicator shows the Program's performance in accommodating the required Research Investigations on the ISS and the required research objectives for those investigations, as defined in the 12-month plan. Note that the planned investigations for FY03 and FY04 have been constrained to fit within available critical Station research resources. An additional metric will be developed to measure performance against a Headquarters-developed strategic plan.

STATUS DETAIL

- Cumulative through Increment 6: 99% Planned Investigations initiated.
 - Increment 7: 67% of the number of Originally Planned Investigations expected to be initiated.
 - Increment 7: 72% of the number of Replanned Investigations expected to be initiated.
 - Increment 8: 64% of the number of Originally Planned Investigations expected to be initiated.
 - Increment 8: If 7S & 13P research standby upmass is achieved, 96% of the number of Originally Planned Investigations will be initiated.
 - Nine total payload Risk Mitigation Tests added to Increments 7 and 8 to improve success probability of future investigations.
- ▶ The complement of Investigations in the expected plans is partially different from that in the original plans.

PERFORMANCE INDICATOR METRICS



Metrics / Performance Information

S. Research Investigations Accommodated, Compared to the 12-Month Plan

August 2003 (Data through 31 July 2003)

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- G** Cumulative through Increment 6: 99% Planned Investigations initiated.
- R** Increment 7: 67% of the number of Originally Planned Investigations expected to be initiated.
- R** Increment 7: 72% of the number of Replanned Investigations expected to be initiated.
- R** Increment 8: 64% of the number of Originally Planned Investigations expected to be initiated.
- G** Increment 8: If 7S & 13P research standby upmass is achieved, 96% of the number of Originally Planned Investigations will be initiated.
- G** Nine total payload Risk Mitigation Tests added to Increments 7 and 8 to improve success probability of future investigations.

Status: Yellow

Total Number of Initiated Investigations to Date = 70

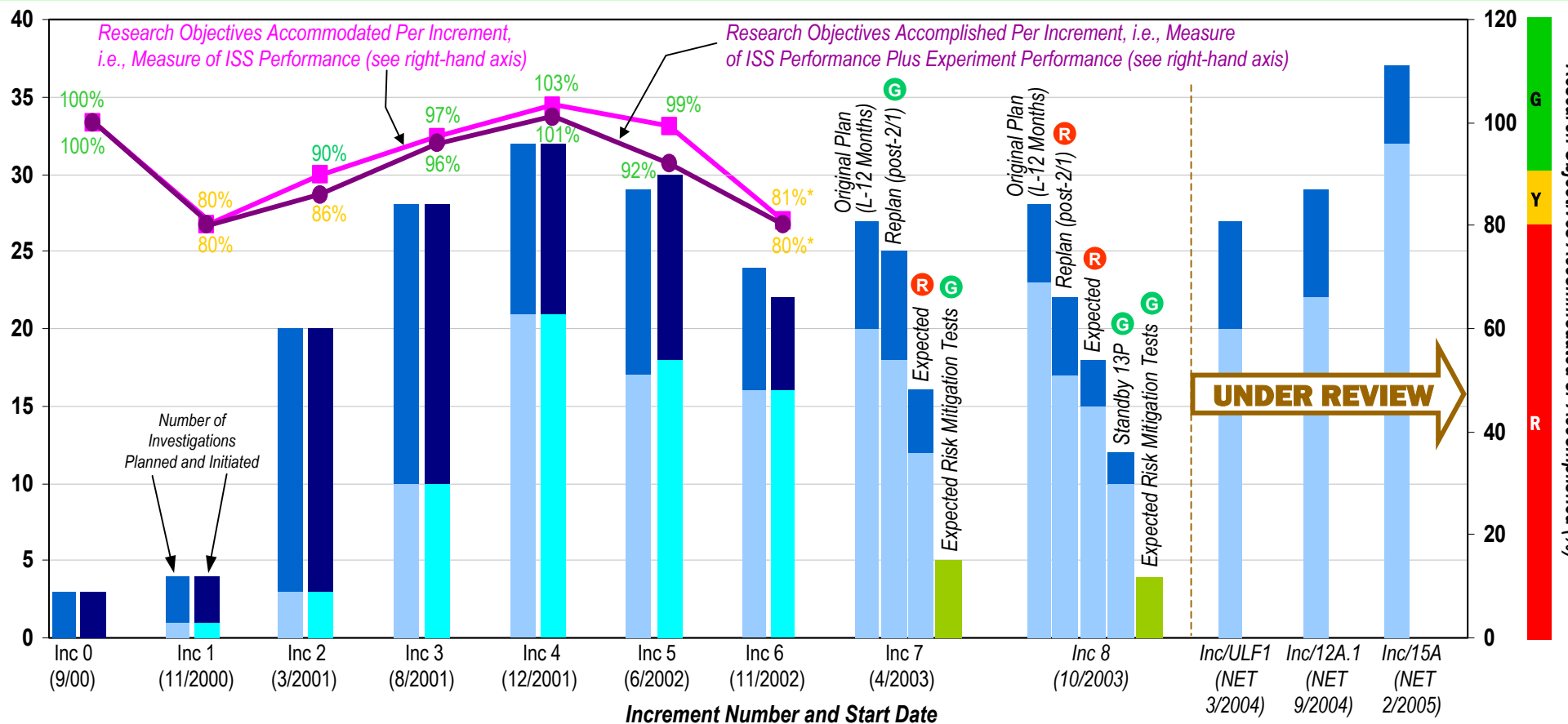
Continuous U.S. Research Time to Date = 29 Months

Research Objectives Accommodated (Cumulative) through Increment 6 = 94%

Average Investigation Duration through Increment 6* = 1838 Hours (77 days)

Research Objectives Accomplished (Cumulative) through Increment 6 = 91%

Average Crew Time Per Investigation through Increment 6 = 22 Hours



Investigation Research Metrics: *Definitions, Sources, and Status Levels*

5 August 2003 (Data through 31 July 2003)

[POC: Lesa Roe/OZ]



Definitions, Sources, and Status Levels

U.S. Investigator: The principal person selected or approved by NASA to conduct a research investigation on-board ISS.

Investigations: Any NASA-sponsored scientific research, commercial research, engineering research, Earth observations, partner research sponsored through NASA, and education experiments or demonstrations conducted on-board ISS. Does not include Risk Mitigation Tests (*see separate definition*).

Source: Lead Increment Scientist

Total Number of Investigations to Date: The cumulative number of U.S.-sponsored investigations carried out on ISS to date. This number also includes any international investigations conducted with U.S. research resources as part of agreements with the ISS international partners. If an investigation requires experimentation on more than one Increment, it is designated a continuing investigation and counted only once. The cumulative number is updated at the date of each Shuttle flight to ISS, which is when new investigations are added.

Source: The Investigator Master List, maintained by the Lead Increment Scientist, provides the number per Increment. The Increment Scientist also provides the cumulative number per Shuttle flight.

Increment Length: The time period that an expedition crew is on orbit. It is measured from their launch date to their ISS undock date, and is documented in the Increment Definition Requirements Document (IDRD) Flight Program Definition matrix.

Continuous U.S. Research Time to Date: The time that the U.S. Laboratory has been continuously supporting research investigations, not counting short-term stoppages lasting only a few hours. The U.S. Lab began supporting research investigations in March 2001, and has done so continuously since then.

Source: The Increment Scientist assisted by investigation payload planners at NASA/Marshall Space Flight Center.

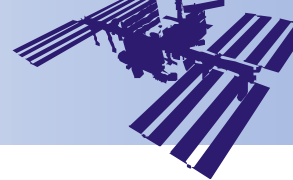
Research Objectives Accommodated: Each investigation may have several objectives, experiments, or steps to be carried out during an Increment. For each investigation, the percent of objectives, experiments, or steps successfully accommodated by the ISS is calculated then all investigations are averaged together to determine the per Increment value and the cumulative value through the last completed Increment. Only the performance of ISS in accommodating the investigation is measured. The metric does not include performance of the experiment hardware.

Source: ISS Research Accommodations list, maintained

Investigation Research Metrics: *Definitions, Sources, and Status Levels*

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Average Investigation Duration Through Increment X: The average length of time that all investigations to date used the exposure to the space environment, including microgravity, in the conduct of the experiment. This does not include the times for Human Research Investigations on the crew members.

Average Crew Time Per Investigation Through Increment X: The average length of time that all investigations to date used the crew in the conduct of the experiment. This does not include the times for Human Research Investigations on the crew members.

Research Objectives Accomplished: The percent of planned research objectives defined for each investigation that have been accommodated successfully by the ISS and performed successfully by the experiment hardware. The values for each investigation are averaged together to determine the research objectives accomplished during each Increment and the cumulative objectives accomplished through the last completed Increment.

Source: ISS Research Accomplishments and Failures list, maintained by the lead Increment scientist.

Number of Investigations Planned Per Increment: The number of U.S.-sponsored investigations planned 12 months in advance for an Increment, including both new and continuing investigations occurring during that increment.

Source: ISS Research Accommodations list, maintained by the lead Increment scientist.

Number of Investigations – Original Plan: The number of U.S.-sponsored investigations planned for the Increment prior to the Columbia STS-107 accident, including both new and continuing investigations during that Increment.

Number of Investigations – Replan: The number of U.S.-sponsored investigations for the Increment replanned in April 2003 after the Columbia STS-107 accident, including both new and continuing investigations during that Increment.

Number of Investigations – Expected: The number of U.S.-sponsored investigations for the Increment expected to be initiated in the Increment during the Shuttle down-time, including including both new and continuing investigations during that Increment.

Number of Investigations Initiated Per Increment: The number of U.S.-sponsored investigations actually carried out during an Increment, at least partially, including both new and continuing investigations.

Source: ISS Research Accommodations list, maintained by the lead Increment scientist.

Investigation Research Metrics: *Definitions, Sources, and Status Levels*

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Risk Mitigation Tests: Engineering and Equipment Tests of research payload hardware conducted on-board ISS to improve the probability of success of a future investigation. Risk Mitigation Tests are not included under the definition of Investigations (*see separate definition*).

Status Level Definitions

Research Objectives Accommodated (%)

Green: 90% or more of research objectives accommodated.

Yellow: 80-90% of research objectives accommodated.

Red: Less than 80% of research objectives accommodated.

Research Objectives Accomplished (%)

Green: 90% or more of research objectives accomplished.

Yellow: 80-90% of research objectives accomplished.

Red: Less than 80% of research objectives accomplished.

Number of Investigations Initiated Per Increment

Green: 90% or more investigations initiated.

Yellow: 80-90% of investigations initiated.

Red: Less than 80% of investigations initiated.